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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,390	12/27/2000	Shirun Ho	500.39434X00	3778

7590 06/30/2004

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EXAMINER	
PALADINI, ALBERT WILLIAM	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,390	HO ET AL.	
	Examiner	Art Unit	
	Albert W Paladini	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the general discussion of BACKGROUND OF THE INVENTION on pages 1-6, input parameters and design values are discussed, but not clearly defined. Traditionally, design values or parameters are the specifications for the design. In an electrical system consisting of resistors, capacitors, and inductors; the numeric values of the components are selected in order to achieve a desired output such as output voltage and frequency. In a manufacturing environment, temperatures and pressures might be chosen for different manufacturing steps to obtain a product with desired characteristics. In the instant application, some input parameters are set, and this result in design parameters. The specification must clearly differentiate between what is meant by "input parameters" and "design results" or parameters. For example, lines 15-19 on page 2 discuss "design objects." Since the design parameters are inputs set by the designer, it is not understood how they are evaluated by experimentation, nor is it

understood what is meant by "input parameters." Referring to figure 1, lines 17-22 on page 13 state "In a control section to set up parameters 106 of the present invention, design values which are the calculation results 103 obtained by compared with design conditions 105 to obtain the design conditions 104." It is not clear what kind of "design values" would emerge from simulation 103. Design values are generally parameters of a device or system, which are set by engineering to achieve a desired output or result. The example given on lines 24-25 of page 13, "experimental results obtained through trial manufacture" would result in output parameters like yield, product attributes, product dimensions, product electrical or mechanical characteristics, etc. Design conditions are those parameters imposed on a system to achieve the desired outputs. Referring to Figure 2, Lines 18-22 on page 14 state "The 'accumulative distribution' referred to herein is a value indicating how many times the same input value of parameter appears in the distribution of the input values associated with the plurality of design values." Since the input parameters are set in advance as shown in step 101 of Figure 1, it is already known how many times the same input parameters appear. There is not mechanism described in the specification that probabilistically sets input parameters. Running a simulation program using preselected input parameters does not change their frequency of occurrence.

Appropriate correction and clarification are required.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

Lines 3-4 recite, "values of plural kinds of input parameters are set from an input display unit." It is not understood how "values of plural kinds of input parameters" can be "set from an input display unit." A display unit is not normally an input device.

Lines 7-8 recite "design values which are execution results of the simulation." Traditionally, design values or parameters are the specifications for the design. In an electrical system consisting of resistors, capacitors, and inductors; the numeric values of the components are selected in order to achieve a desired output such as output voltage and frequency. In a manufacturing environment, temperatures and pressures might be chosen for different manufacturing steps to obtain a product with desired

characteristics. In the instant application, some input parameters are set, and this result in design parameters. It is not understood how design values are "execution results" from a simulation.

Lines 22-24 recite "extracting the input values of the parameters to be referred, every kind of input parameter based on a value of the accumulative distribution." The phrase "parameters to be referred" is not understood. What does referring parameters mean? Since the input parameters are chosen in advance, as illustrated in step 101 of Figure 1 and recited in lines 3-4, the input parameters and thus the accumulative distribution values are preset before the simulation and will not be the results of the simulation.

Claim 5

Lines 3-4 recite, "values of plural kinds of input parameters are set from an input display unit." It is not understood how "plural sets of values of values of plural kinds of input parameters are set from an input display unit." A display unit is not normally an input device.

Lines 8 recites "design values which are execution results of the simulation." Traditionally, design values or parameters are the specifications for the design. In an electrical system consisting of resistors, capacitors, and inductors; the numeric values of the components are selected in order to achieve a desired output such as output voltage and frequency. In a manufacturing environment, temperatures and pressures might be chosen for different manufacturing steps to obtain a product with desired

characteristics. In the instant application, some input parameters are set, and this result in design parameters. It is not understood how design values are "execution results" from a simulation.

Lines 24-27 recite "extracting the input values of the parameters to be referred, every kind of input parameter based on a value of the accumulative distribution." The phrase "parameters to be referred" is not understood. What does referring parameters mean? Since the input parameters are chosen in advance, as illustrated in step 101 of Figure 1 and recited in lines 3-4, the input parameters and thus the accumulative distribution values are preset before the simulation and will not be the results of the simulation.

Appropriate correction and clarification are required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda (5544348).

This rejection is made to the extent that the claims are understood by addressing elements and steps recited and inferring how they might operate in a functionally interactive manner, which supports the gleaned objective of the invention.

In figure 7, Umeda discloses a simulation flow chart where the input parameters are input in block 1A of figure 1. Umeda utilizes a cumulative distribution for characterizing events as described from column 4 line 51 to column 5 line 6 where he states "The events are the changes of state in each object, such as when a machine starts operation, or when a machine completes conveyance. There are two types of records. One is a cumulative calculation record for finding the distribution of the times of the objects by operation, such as the operating times of machines, the times for changing arrangements, the times for repairing faults, or the transportation times by transporting equipment. The second record is an input/output record of the parts to be processed and/or assembled to and from the machines and transporting equipment. The records thus obtained are outputted to a data file holding section 1D as an external file in the form of an intermediate data file (not shown). The times for processing the events of each object (such as machines and transporting equipment) are determined by random numbers that are found by the congruential multiplication method. Therefore, the results of the simulation are affected by the series of random numbers, and, to solve this, the apparatus incorporates a replication function that executes simulation several times under the same execution conditions by changing the series of the random numbers." The selection of design parameters as a result of the simulation are described on lines 8-36 in column 3 which states "The descriptive elements of the model are roughly divided into three types; cells (nodes of a production system and nodes of entrance and exit), transporting systems, and operators, all of which correspond to actual resources in the plant. The simulation model of this invention represents the descriptive elements in the form of a table of the descriptive elements wherein, in many cases, the description items correspond to their contents in a one-to-one manner, and are easily described. Each descriptive element is also provided with description types, not only for the means installed in the process such as the machines, the buffers and the arrangement information, but also for the process components relating to the operations of the process, such as a daily production plan, an ordering system and a production ordering system. This enables the present invention to model an actual production system in more detail and more precisely. Description can be made in more detail according to the purpose of the process being described,

while default values can be automatically set for particularly specified items. Thus, the present invention can satisfy user demands to obtain results early on, even when a model may be slightly coarse (not described in detail). When the intention is to make a simplified model more detailed, this is easily accomplished, because it is sufficient to change each frame at a lower level. In addition, because setting of the simulation parameters is separated from the building of a model, the present invention can quickly satisfy such cases in which simulations are executed only by changing the conditions of runs (such as in the evaluation of a system before its design). "

As demonstrated in paragraphs 1-5, the accumulative distribution based on the recited relationship between input and design parameters was not satisfactorily explained in either the specification or the claims, therefore it would not be understandable to one of ordinary skill in the art and could not be addressed.

Relevant Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki (6035115) discloses a semiconductor simulation method, which uses a worst-case variation model formulation, based upon the maximum and minimum parameter values to arrive at an optimal circuit performance.

Karafillis (6353768) disclose a method for designing a sheet metal manufacturing process using a simulation technique called ABAQUS to select the forming parameters and design the die shapes of a forming process.

Heavlin (6366822) discloses a method of defining process tolerances by analyzing the variance of the manufacturing output as a function of the variances of the input parameters, and by tightening the input parameters to achieve the desired process confidence level.

10. Any inquiry concerning this communication or earlier communication from the examiner should be direct to Albert W. Paladini whose telephone number is (703) 308-2005. The examiner can normally be reached from 7:30 to 3:30 PM on Monday, Tuesday, Thursday, and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Leo P. Picard, can be reached on (703) 308-0538. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Albert W. Paladini
Primary Examiner
Art Unit 2125

June 24, 2004